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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

DINH, TRINH VO

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,392	Applicant(s) IWATA ET AL.	
	Examiner Trinh Vo Dinh	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 2-4, 10-13, 15-18, 21-23 and 26-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5-9, 14, 19, 20, 24 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>09/19/2006;07/03/2007;07/31/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Claims 2-4, 10-13, 15-18, 21-23 and 26-33 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 05/04/2010. Accordingly, elected-claims 1, 5-9, 14, 19-20 and 24-25 are pending.

Claim Objections

2. Claim 1 is objected to because of the following informalities:

In claim 1, line 15 and 17, ‘*the direction*’, “*the integrated radio wave*” and “*the direction normal*” should be changed to --a direction--, --an integrated radio wave-- and --the direction-- respectively since there are not any antecedent basis for the elements.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 5-9, 14, and 24-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 14 and 24 all recite “high frequency signal” which render the claim indefinite since the word “high” is a relative term. It is unclear how high a signal is the high frequency signal.

Claim 5 recites “*said at least one spot (52) of the at least one antenna electrode (54) which is connected to said ground electrode (56) is in the vicinity of a terminal edge of said at*”

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least one antenna electrode, and is located at a position approximately in the middle thereof in a direction which is orthogonal to the direction from said feed point to its terminal edge” which renders the claim indefinite for the following reasons:

1. it is unclear what “in the middle thereof” means.
2. “the direction” in line 4 has no antecedent basis.
3. it is unclear what “its” refers to, and whether or not “its terminal edge” in line 4 is

different to or the same as “a terminal edge of said at least one antenna electrode” in line 2.

For an examination's purpose, the recitation is best understood as “*said at least one spot (52) of the at least one antenna electrode (54) which is connected to said ground electrode (56) is in the vicinity of a terminal edge of said at least one antenna electrode*”

Claims 6-9 and 25 are rejected because they depend on the rejected based claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 5 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Ngai et al (US 2003/0164797).

Respecting claims 1 and 14, Ngai discloses, in Fig. 1 and 3, a microstrip antenna comprising an insulating substrate (12 in Fig. 1 or 62, 64 in Fig. 3), a plurality of antenna

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electrodes (14a, 14b) disposed upon one surface of said substrate, each having a feed point (18a, 18b in Fig.1 or 55 in Fig. 3, paragraph hereafter para. 0031]) for application of a high frequency signal; a ground electrode (20 in Fig. 1; 56, 60 in Fig. 3, para. [0033]) disposed upon the other side of, or in the interior of, said substrate, for supplying ground level; and a connection member (52, 58a, 58b) for connecting at least one antenna electrode (54 or 56) among said plurality of antenna electrodes (14a, 14b in Fig. 1, or 54, 56 in Fig. 3) to said ground electrode, at least at one spot (52, 58a, 58b) thereof which is different from said feed point (55) thereof; wherein said connection member (52, 58a, 58b) is disposed at a location within a plane region occupied by said at least one antenna electrode (54 or 56) when said at least one antenna electrode is seen in plan view. Ngai also discloses said at least one antenna electrode (54, 56) is connected to said ground electrode (56 or 60) at said location. Claim 1 further recites ‘such that the direction of the integrated radio wave beam which is emitted from said plurality of antenna electrodes is inclined from the direction normal to said substrate’. Ngai discloses the same structural configuration as the claimed invention. Therefore, although not explicitly stated in Ngai, it is inherently that the configuration of the electrode and ground of Ngai would perform claimed function of “*the direction of the integrated radio wave beam which is emitted from said plurality of antenna electrodes is inclined from the direction normal to said substrate*”.

Respecting claim 5, Ngai discloses said at least one spot (52) of the at least one antenna electrode (54) which is connected to said ground electrode (56) is in the vicinity of a terminal edge of said at least one antenna electrode, and is located at a position approximately in the middle thereof in a direction which is orthogonal to the direction from said feed point to its terminal edge.

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7. Claims 1, 6-7, 14, 19-20 and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Richards (US 6,195,047).

Respecting claims 1 and 14, Richards discloses, in Fig. 1-4, a microstrip antenna comprising an insulating substrate (30), a plurality of antenna electrodes (20) disposed upon one surface of said substrate, each having a feed point (41-48 in Fig. 4) for application of a high frequency signal; a ground electrode (26) disposed upon the other side of, or in the interior of, said substrate, for supplying ground level; and a connection member (24 in Fig. 2B, col. 4 lines 10+) for connecting at least one antenna electrode (20) among said plurality of antenna electrodes (20) to said ground electrode, at least at one spot (one of 42, 44, 46, 48, 50 in col. 5 lines 10+) thereof which is different from said feed point (one of 42, 44, 46, 48, 50) thereof; wherein said connection member (24) is disposed at a location within a plane region occupied by said at least one antenna electrode (20) when said at least one antenna electrode is seen in plan view. Richards also discloses said at least one antenna electrode (20) is connected to said ground electrode (26) at said location. Claim 1 further recites ‘such that the direction of the integrated radio wave beam which is emitted from said plurality of antenna electrodes is inclined from the direction normal to said substrate’. Richards discloses the same structural configuration as the claimed invention. Therefore, although not explicitly stated in Richards, it is inherently that the configuration of the electrode and ground of Richards would perform claimed function of “*the direction of the integrated radio wave beam which is emitted from said plurality of antenna electrodes is inclined from the direction normal to said substrate*”.

Respecting claims 24-25, Richards discloses a substrate, antenna electrodes, a ground electrode, and a connection member as discussed in claims 1 and 14. Richards further discloses

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a plurality of connection members (col. 4 lines 10-30) for connecting the at least one antenna electrode (20) among the plurality of antenna electrodes respectively to the ground electrode (26), and a plurality of switches (col. 4 lines 10-30, or 76 in Fig. 4) which respectively open and close the connections between said at least one antenna electrode and said ground electrode via said plurality of connection members.

Respecting claims 6-7 and 19-20, Richards discloses a switch (col. 4 lines 10-30, or 76 in Fig. 4) which respectively open and close the connections between said at least one antenna electrode and said ground electrode via said plurality of connection members, and the switch being disposed at a connection spot between the connection member and the ground electrode (col. 2 lines 42+).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richards in view of Wan (US 2008/0308920).

Respecting claims 8-9, Richards discloses every feature of the claimed invention except switch having first and second gaps. Wan discloses, in Figs. 8b-8c, a switch comprising two electrical contact points which are respectively connected to said connection member and to said ground electrode, and said two electrical contact points are arranged to be separated by a first gap between them in the ON state (Fig. 8c), and to be separated by a second gap which is larger

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than said first gap in the OFF state (Fig. 8b), or the mutual distance between said two electrical contact points is variable, and an insulating film (9) is provided between said two electrical contact points. It would have been obvious to one having ordinary skill in the art to employ Wan's switch to Richard's array antenna in order to improve the antenna's operation.

Inquiry

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821 and email address is trinh.dinh@uspto.gov. The examiner can normally be reached on IFW (Increase Flexible Work). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens, can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 20, 2010

/Trinh Vo Dinh/

Primary Examiner, Art Unit 2821/